



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

March 12, 1835.

The Rev. PHILIP JENNINGS, D.D., Vice-President, in the Chair.

Continuation of a former paper "On the twenty-five feet Zenith Telescope, lately erected at the Royal Observatory ;" by John Pond, Esq., F.R.S., Astronomer Royal.

For determining the place of any star passing the meridian near the zenith, at the Royal Observatory at Greenwich, three different methods may be employed : first, by means of the mural circles ; secondly, by the zenith telescope, used alternately east and west ; and lastly, by means of a small subsidiary angle, as described by the author in a former paper. The details of computations made according to each of these three methods are contained in the present paper ; from which it appears that they all give results nearly identical ; and that, when the observations with the two circles are made with sufficient care, the greatest error to be apprehended does not exceed the quarter of a second.

"Remarks towards establishing a Theory of the Dispersion of Light." By the Rev. Baden Powell, M.A., F.R.S., Savilian Professor of Geometry in the University of Oxford.

In an abstract of M. Cauchy's Theory of Undulations, published in the London and Edinburgh Journal of Science, the author of the present paper deduced a formula expressing precisely the relation between the length of a wave and the velocity of its propagation ; and showed that this last quantity is, in fact, the same as the reciprocal of the refractive index. The author here examines, by means of this formula, the relation between the index of refraction and the length of the period, or wave, for each definite ray, throughout the whole series of numerical results which we at present possess ; and the conclusion to which he arrives from this comparison, for all the substances examined by Frauenhofer, viz. for four kinds of flint glass, three of crown glass, water, solution of potash, and oil of turpentine, is that the refractive indices observed for each of the seven definite rays are related to the length of waves of the same rays, as nearly as possible according to the formula above deduced from Cauchy's theory. For all the media as yet accurately examined, therefore, the theory of undulations, as modified by that distinguished analyst, supplies at once both the law and the explanation of the phenomena of the dispersion of light.

March 19, 1835.

Sir JOHN RENNIE, Knt., Vice-President, in the Chair.

A paper was read, entitled, "Some Account of the Eruption of Vesuvius, which occurred in the month of August, 1834, extracted from the manuscript notes of the Cavaliere Monticelli, Foreign Associate of the Geological Society, and from other sources ; together with a Statement of the Products of the Eruption, and of the Con-